II. SSOs and Their Functions in Standardization

A. The Process of Standardization: Definition and Importance

A technology standard could be defined as 'any set of technical specifications that either provides or is intended to provide a common design for a product or process'.[8] To become a standard, such specifications must undergo a process of examination and approval. Al this could be performed through regulatory systems, private industry bodies, or just simple market acceptance by consumers, which recognizes that they deserve a wide adoption.[9] Based on how the standards are set, legal literature distinguishes two ways of standard-setting: a) *de jure* and b) *de facto* standardization.

In the latter type, each company competes for the standard, and, thereby, for the market trying to convince all market participants to adopt a particular technology. In other words, *de facto* standards emerge if the technology of a specific company becomes predominant in the market.[10] Once a specific technology has attracted a substantial number of customers, the benefits arising from the high number of persons already using this technology will be decisive competition parameter for convincing all other customers to accept this technology.

The other type of standard-setting, *de jure* standardization, is regarded as a procedure, which helps to elect the most superior technology as a standard and encourages the participation of all market players.[11] *De jure* standard-setting, which is regarded as highly dynamic and containing enormous

8 Kraig A Jakobsen ''Revisiting Standard-Setting Organizations' Patent Policies' [2004] 3 Northwestern Journal of Technology and Intellectual Property 43, 45.

9 Keith Maskus and Stephen A. Merrill (eds), *Patent Challenges for Standard-Setting in the Global Economy: Lessons from Information and Communication Technology* (The National Academies Press 2013) 15.

10 Sven Sattler ''Standardization under EU competition rules – the Commission's new horizontal guidelines' [2011] 32 European Competition Law Review 343, 344.

11 Josef Drexl ''Intellectual Property in Competition: How to Promote Dynamic Competition as a Goal' in Josef Drexl, Warren S. Grimes, Clifford A. Jones (eds), *More Common Ground for International Competition Law?* (Edward Elgar Publishing 2011) 210, 216.

complexity,[12] is performed by the help of SSOs. Nowadays there exists a variety of SSOs and nobody could argue that SSOs play a tremendous role in the standardization, which has an impact on the competition, the development of particular industries and the entire economic system.[13]

The general goal of SSOs is to bring benefits to the society by creating widely adopted industry standards.[14] The establishment of a single version of a technology helps to create the interoperability of devices purchased from different producers, ease the product substitution, reduce consumer search costs and increase consumer confidence.[15] Additionally, standardization allows downstream producers to devote resources to research and development of more widely useable consumer goods.[16] When the standards are set correctly, the afore-specified objectives usually are met.

It should be mentioned, that technology developers often use patents to protect and commercialize their inventions and, ultimately, to support investments in research and development.[17] When such patents are incorporated into standards, it may cause tension between the innovators, who own the SEPs and seek economic returns on their R&D investments, and the users of standardized technology, who wish to access the SEPs on affordable terms.[18] The preservation of balance between the aforementioned interests regarding the *de jure* standards is a central problem for SSOs before the standard is set and, if after the establishing of the standard a litigation emerges, for the courts.

The afore-specified shows, that besides the benefits to the society of the establishment of widely adopted standards, standardization procedures and SSOs themselves contain internal contradictions, which may lead to re-

12 Sattler (n 10) 344.
13 Mark A Lemley ''Intellectual Property Rights and Standard-Setting Organizations' [2002] 90 California Law Review 1889, 1891.
14 Jakobsen (n 8) 45, as cited in James De Vellis, *Patenting Industry Standards: Balancing the Rights of Patent Holders with the Need for Industry-Wide Standards,* 31 AIPLA Q.J. 301, 336 (2003).
15 Robert Tallman ''U.S. and E.U. Antitrust Enforcement Efforts in the Rambus Matter: A Patent Law Perspective' [2012] 52 IDEA 31, 36.
16 Joel M Wallace ''Rambus v. F.T.C. in the Context of Standard-Setting Organizations, Antitrust, and the Patent Hold-Up Problem' [2009] 24 Berkeley Technology Law Journal 661, 663 (as cited in Mark A. Lemley, *Ten Things to do About Patent Holdup of Standards (and One Not To)*, 48 B. C. L. REV. 149, 149 (2007)).
17 Maskus and Merrill (eds) (n 9) 16.
18 ibid 16.

sults that are less than ideal and make competition law authorities look at the process of standardization with a certain level of suspicion. The first internal contradiction lying in the SSOs is that standardization is both a competitive and a co-operative process. Standard-setting requires competitors to collaborate and carries the risk of limiting competition: by setting detailed technical specifications for a product or service the scope for different and competing ways of technical development may be narrowed.[19] This way the activities of SSO members may be regarded as agreements having as their object or effect the prevention, restriction or distortion of competition within the EU market and being prohibited under the Art. 101 (1) of the Treaty on the Functioning of the European Union[20] (TFEU).

However, Art. 101 (3) TFEU states, that the former provision is inapplicable to agreements contributing to the improvement of production or distribution of goods or to promotion of technical or economic progress, while allowing consumers a fair share of the resulting benefit. Therefore, Art. 101 TFEU does not preclude companies from participating in pro-competitive standard-setting processes. This is confirmed by the Guidelines on the applicability of Article 101 of the Treaty on the Functioning of the European Union to horizontal co-operation agreements (Guidelines).[21] It should be mentioned, that the application of the afore-specified exemption becomes problematic, when the standard, after it is being set, is not available for the use of other markets participants, this way obstructing pro-competitiveness and innovation.

Secondly, the goal of SSOs is to set and promulgate a standard, which would be applicable in a specific industry sector. As it has been stated, usually the technology selected by the SSOs is protected by IPRs. Thus, standardization procedure places the owner of a specific IPR in an exclusive market position, that can lead to a market dominance and, later, can be easily abused and result in the restraint of the competition. This way the process of standardization may also result in the infringement of EU competition law as it is foreseen in the Art. 102 TFEU as the abuse of dominant position.

19 Sattler (n 10) 344.

20 Consolidated version of the Treaty on the Functioning of the European Union [2008] OJ C115/1.

21 Commission, 'Guidelines of 14 January 2011 on the applicability of Article 101 of the Treaty on the Functioning of the European Union to horizontal co-operation agreements' OJ C 11, para 280.

Taking into consideration all the specified above, it is clear that, on the one hand, standardization is an essential process for fostering innovation among market participants and bringing benefits to all the economic system, whereas, on the other hand, this beneficial process is able to cause distortions of competition, which would obstruct further standardization and, thus, lead to less innovation and slower economic advancement. For this reason, it is important to discuss the standard-setting process and the role of SSOs while improving the licensing of *de jure* standards.

B. *The Role of SSOs During Standardization and After the Standard Is Set*

Due to the large variety of SSOs, it is difficult to state the precise number of SSOs that are active at any point in time in the world, because new collaborative efforts are launched on a weekly basis.22 It is acknowledged, that there is no universal taxonomy for distinguishing one type of SSO from another, thus, the acronym 'SSO' is used to describe all the organizations that collaboratively develop standards, including both 'traditional' SSOs as well as infinite number of consortia, alliances, Special Interest Groups and other organizations.[23]

The main goal of the standardization is to make the standard accessible to all the relevant users. However, despite the prevailing approach, that the standards should be kept open to the users, as it has been stated above, the implementation of standards could require the use of a patented technology. This idea was first developed in 1932 by the American National Standards Institute's Committee of Procedure, which claimed, that 'each case should be considered on its own merits and if a patentee be willing to grant such rights as will avoid monopolistic tendencies, favourable consideration of the inclusion of such patented designs or methods in a standard might be given.'[24]

22 Rudi Bekkers and Andrew Updegrove 'IPR Policies and Practices of a Representative Group of Standards-Setting Organizations Worldwide' (2013) <http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2333445> accessed 6 September 2014, 6.

23 ibid 6.

24 Bekkers and Updegrove (n 22) 4. (as cited as in ANSI Minutes of Meeting of Standards Council, November 30, 1932. Item 2564: Relation of Patented Designs or Methods to Standards).

The afore-specified extract reveals the willingness of keeping the balance between owners and users of the standardized technology. This way SSOs occupy a middle ground between open and closed standards.[25] Generally, SSOs allow their members to own IPRs, but require those members to commit in advance to licensing those IPRs on specific terms. Therefore, one could conclude, that standards are open in the sense that no one can be prohibited from using them, but they also remain proprietary in the way, that those who would use the standards must pay royalties to the IPR owner.[26] It is claimed that this intermediate approach is a way of valuing IPRs, while at the same time reducing the risk that IPRs will impede standardization and hold up innovation.'[27]

As it was stated above, nowadays, standardized technology is usually covered by IPRs, therefore, the way in which SSOs respond to those who assert their IPRs becomes highly important.[28] Thus, special rules established by SSOs, which are governing the relevant IPRs, remain of high importance. These IPR rules usually are referred to as 'IPR policies'. The IPR policies may determine who will be able to sell compliant products, influence the incentives to develop new technologies or affect how standards may change if the specific technology improves.[29] For this reason, SSOs are strongly encouraged to take measures, so that the IPR policies would be able to balance the diverging interests between the owners and the users of the standardised technology. According to the Commission, 'a clear and balanced IPR policy <…>, adapted to the particular industry and the needs of the standard-setting organisation in question, increases the likelihood that the implementers of the standard will be granted effective access to the standards elaborated by that standard-setting organisation.'[30]

Due to the fact, that nowadays the standardized technology is proprietary, it becomes crucially important not only to receive the consent of the owner of IPRs to license the SEP, but also to create conditions, that, after the standard is set, would really provide the implementers to receive all the

25 'Open' standards are regarded as standards which are not controlled by anyone and can be adopted freely by all market participants, whereas 'closed' or proprietary standards cannot be used without the permission of the standard owner (Patrick D. Curran ''Standard-Setting Organizations: Patents, Price Fixing, and Per Se Legality' [2003] 70 The University of Chicago Law Review 983, 990).

26 Lemley (n 13) 1902.

27 ibid 1902.

28 ibid 1889.

29 ibid 1893.

30 Guidelines (n 21) para 284.

necessary licenses and access that technology for a certain royalty. Thus, if an undertaking's patent covers an industry standard, SSOs typically require the company to disclose that patent to all SSO members before the technology is considered as a potential industry standard. If the owner of the essential IPR wishes its technology to be approved as a standard, the owner is required to offer SSO's members licenses under FRAND terms.[31]

With regard to all the specified above, it is possible to state, that standardization consists of two stages: (i) selection of the standard and reception of FRAND commitment from the SEP owner and (ii) licensing of the SEP to all the users of that standard. For this reason, the analysis of the activities of SSOs in standard-setting could be divided into: (i) the role of SSOs during the standard-setting procedures, and (ii) their influence on the implementation of the standard into the industry after it is set. When it comes to the effective implementation of a standard into the industry sector, the IPR policies, which have the goal to ensure that all the known essential IPRs are available under FRAND license terms,[32] are essentially important in determining the actions of SSOs and their members in both of the afore-specified stages.

SSOs usually are in the position to accommodate divergent interests of their members and try to accomplish that through IPR policies. It is claimed that, in order to achieve this objective, IPR policies encompass the following goals: (i) providing SEP owners with an adequate compensation for their patented technology taking into consideration the investments in R&D; and (ii) assuring the implementers of the standard the opportunity to profitably bring standardized products and services to the market, including by practicing patented inventions embodied in such products and services, and thereby allowing the broad adoption and uptake of the standard.[33]

With regard to the afore-specified, it is possible to claim, that SSOs have the responsibility to design appropriate rules, in order to make the stand-

31 European Telecommunications Standards Institute's Intellectual Property Rights Policy (as amended 19 March 2013) para 6.1.

32 Bekkers and Updegrove (n 22) 104.

33 Pierre Larouche, Jorge Padilla and Richard S Taffnet, 'Settling FRAND Disputes. Is Mandatory Arbitration a Reasonable and Non-Discriminatory Alternative?'(2013) Hoover IP2 Working Paper Series 13003, 1 <http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2346892> accessed 18 August 2014, 7 (as cited in WiseHarbor, *A Compendium of Industry and Market Analysis Articles on Intellectual Property Mobile Communications Standards*, 6-7 (June 12, 2011)).

ardized technology accessible to the users, provide SEP owners with the necessary economic benefit and, at the same time, reduce the risk of competition law problems. Such a responsibility of SSOs is reflected in the Guidelines[34] that establish the directions for SSOs of how best to design their rules, in order to achieve the mentioned goals and avoid competition law issues in the future.

However, due to a variety of participants and diverging interests of the undertakings taking part in standardization, it becomes clear, that it is difficult to come up with clear rules governing the standard-setting procedures, which would work, according to the rule 'one size fits all', be enforceable, provide with legal certainty and be in conformity with public order. For this reason, there are four flexible criteria established by the Guidelines, which make the standard-setting more appropriate to competition law: (i) the requirement stating, that the standard-setting must be unrestricted; (ii) the transparency of the standardization procedure; (iii) the freedom of developing alternative standards or products that do not comply with the agreed standard; (iv) ensuring the access to the standard on FRAND terms.[35]

One may regard the afore-specified criteria as too abstract. However, due to the extensive number of different types of SSOs acting in different industries, these requirements could be regarded as the most appropriate guidance that the Commission could establish. Such criteria provide the SSOs with certain, but at the same time wide legal standards, to which the IPR policies should adhere. Due to the variety of SSOs, different types of members of SSOs and the wide margin of the requirements to IPR policies, the latter documents vary depending on the SSO. Therefore, every IPR policy of every SSO require separate analysis, in order to understand whether it adheres the standards established by the EU legal framework.

Taking into consideration all the specified above, it is clear, that SSOs play a crucially important role in determining de *jure* standards that, later, may become the basis for the business activities of many undertakings. Therefore, SSOs must not only be viewed as entities performing administrative functions, but as important players of standardization process able to support the effective implementation of the standard in the industry, i.e. facilitate the licensing of the SEPs. In such situations, the way in which

34 Guidelines (n 21).
35 ibid paras 280-285.

SSOs, according to their IPR policies, take into consideration the IPRs and confer the obligations related to these IPRs on their members is of fundamental importance. For this reason, in the following part of this work, the IPR policy of European Telecommunications Standards Institute (ETSI), which is considered to be a good example of such type of documents, will be analysed and its impact on the rights as well as obligations of the owners and users of SEPs will be discussed.

C. *European Telecommunications Standards Institute*

ETSI is regarded as being one of the most commercially significant SSOs.[36] This SSO sets standards for the whole mobile telephony industry.[37] The standard-setting performed before ETSI is regarded as a highly complicated process, requiring many working hours of engineers.[38] The discussed SSO is well known for its quite extensive and continuously evolving IPR policy as well as for its cooperation with European Patent Office, in order to upgrade its IPR database, which includes thousands of patent disclosures.[39] In this part of the work, ETSI's IPR policy will be described as a good example of an IPR policy of a SSO.

Usually two types of provisions of the IPR policies of SSOs are pointed out as the most important: (i) the requirement for the owner of the essential IPR to disclose the relevant rights[40] and (ii) the requirement for the owner of the essential IPR to make an irrevocable FRAND declaration.[41] These provisions are also found in ETSI's IPR policy. According to the ETSI's IPR policy, the term 'essential' as applied to IPRs means that it is not possible on technical grounds, taking into consideration normal technical practice and the state of the art generally available at the time of

36 Roger G Brooks ''SSO Rules, Standardization, and SEP Licensing: Economic Questions from the Trenches' [2013] 9 (4) Journal of Competition Law & Economics 859, 860.
37 Robin Jacob ''Competition Authorities Support Grasshoppers: Competition Law as a Threat to Innovation' [2013] 9 (2) Competition Policy International 15, 22.
38 ibid 22.
39 Bekkers and Updegrove (n 22) 22.
40 Intellectual Property Rights Policy (n 31) paras 4.1-4.2.
41 ibid para 6.1.

standardization, to make, sell, lease, otherwise dispose of, repair, use or operate equipment or methods which comply with the standard without infringing that IPR.[42] The latter provisions are regarded as the main elements that many SSOs share in their IPR policies[43] and, therefore, these obligations will be discussed in the context of ETSI.

Firstly, understanding the rationale of the disclosure requirement indicated in the ETSI IPR policy is relatively easy. By obtaining the correct information what type of technology is already patented, the SSOs will be able to coordinate their actions while setting a more appropriate standard, and create better opportunities for the implementation of the standardized technology. In other words, it is in the interest of future implementers and users to receive as much information as possible before the standard is set.

Nevertheless, it is claimed, that such disclosure of relevant IPRs is more suitable for ideal world, where it is very easy to locate every patent and asses its validity.[44] However, we clearly live in a reality, where patent searches are costly and tend to be subjective. Knowing everything about the vast portfolio of patents or, if necessary, other IPRs is difficult for large companies,[45] whereas, smaller ones may face another problem: not having enough resources to monitor every standardization activity and every IPR they own. Thus, although understandable on the one hand, the discussed obligation regarding the disclosure, on the other hand, is susceptible to uncertainty, which, after the standard is set, may lead to competition law issues and extensive litigation regarding the licensing of standard covered by IPRs.

Indeed, ETSI has the most extensive disclosure obligation, which applies to all members and all standard activities, whether these parties are participating in the development of a certain standard or not, however, the accurateness of such a disclosure is based only on the knowledge of its members.[46] In addition, despite such extensive disclosure requirements, ETSI is among the group of SSOs explicitly stating, that patent searches are not required. ETSI's IPR policy states, that 'each member shall use its reasonable endeavours, in particular during the development of a standard or

42 ibid para 15.6.
43 Bekkers and Updegrove (n 22) 17.
44 Bekkers and Updegrove (n 22) 71.
45 David J Teece and Edward F Sherry ''Standards Setting and Antitrust' [2002] 87 Minnesota Law Review 1913, 1945.
46 Bekkers and Updegrove (n 22) 72.

technical specification where it participates, to inform ETSI of its essential IPRs in a timely fashion.'[47] Thus, in order to meet the requirements of ETSI, the owner of relevant IPRs must only use 'reasonable endeavours' while looking through their IPR portfolio and submit the information in a 'timely fashion'. Such provisions clearly do not entail any IPR searches and provide with a wide margin of freedom for ETSI's members to act during the standardization process. The afore-specified provisions of IPR policy allows to conclude, that many important aspects related to standardized technology covered by SEPs may appear only after ETSI sets the standard. This example calls for a discussion on the role of SSOs in the post-standardization procedures.

Secondly, in the SSOs, that have more formal IPR policies, the afore-discussed disclosure is typically intended to result in a commitment to license the IPRs to the users of the standard.[48] According to ETSI's IPR policy, when essential IPR relating to a particular standard is disclosed, ETSI will request – but not oblige – the owner of the IPR to undertake in writing that it is prepared to grant irrevocable licenses on FRAND terms and conditions.[49] Such a FRAND commitment is like a middle ground between the right of the SEP owner to refuse to license and the access of SEP user to the technology: 'A FRAND commitment <…> entails a promise by the IPR owner that it is prepared to engage in good faith negotiations with any company that will be defined in the light of all circumstances present between the two parties at the time of negotiations.'[50]

However, with regard to afore-specified FRAND commitment, it should be mentioned, that ETSI's IPR policy does not contain an obligation for the IPR owner to license its essential IPR. Rather, it provides that a standard or specification may not be approved unless the owner of essential IPR provides an assurance of its intentions. In this case, it is possible to state, that ETSI's IPR policy is not able to make the commitment to license obligatory, because that would discourage the companies to participate in SSOs at all.

47 Intellectual Property Rights Policy (n 31) para 4.1
48 Bekkers and Updegrove (n 22) 71.
49 Intellectual Property Rights Policy (n 31) para 6.1.
50 Damien Geradin and Miguel Rato ''Can Standard-Setting Lead to Exploitative Abuse? A Dissonant View on Patent Hold-Up, Royalty Stacking and the Meaning of FRAND' [2007] 3 European Competition Law Journal 101, 113.

In connection to all the specified above, it could be claimed, that although ETSI's IPR policy shows a clear standardization policy concern, i.e. to make the standard technology available, however, in reality the discussed document does not provide with effective instruments that would guarantee the availability of the technology without the risk of costly and lengthy litigation after the standard is set. Rather, ETSI's IPR policy clearly refers to FRAND commitment, which is very similar to a general clause, which is to be shaped and given the meaning by referring to concrete objective and subjective situation,[51] and foresees a disclosure, which is based on the reasonable endeavours of the participants of the standardization. Such an approach reveals the general position of ETSI that a large part of the questions related to the availability of the technology, for example, setting of the royalty rates, could only be solved after the standard is established.

In addition, ETSI's IPR policy tries to clearly distinguish the technical and commercial and/or legal aspects of standard-setting. ETSI's Guide on IPRs states, that 'Discussion on licensing issues among competitors in a standards making process can significantly complicate, delay or derail its process.'[52] This approach is also common to other SSOs. In addition, ETSI clearly states, that such discussions regarding legal and commercial aspects will not take place under its standard development activities, holding the view that its role is directed to technical rather than commercial issues.[53] This means that, according to ETSI, the determination of the FRAND character of a license will be evaluated outside this SSO.

Although nobody argues about the technical nature of ETSI and its goal to choose the most appropriate technology, such as the afore-described approach, which isolates technical questions from any legal and/or commercial aspects, may seem doubtful. A standardization procedure, which comprises the setting of the standard and implementing it, is the situation where three different, but highly important for any business spheres – economics, law and technology – come into play. In addition, the afore-discussed provisions of IPR policies: (i) the disclosure requirement, which should be regarded as a technical exercise, and (ii) the FRAND commitment, which to a large extent should be regarded as a commercial and/or economic question, in SEP and FRAND-related litigation proceedings

51 ibid 112.

52 European Telecommunications Standards Institute's Guide on Intellectual Property Rights (as amended 19 September2013) s 4.1.

53 Geradin and Rato (n 50) 110 (as cited in ETSI's Guide on IPR s 4.1).

very often are among the most important issues that need to be dealt with. For this reason, a strict separation of the afore-specified fields in the standard-setting should be avoided. In order to reduce the number of SEPs and FRAND-related cases as well as improving the implementation of standards into the industries, the IPR policies or other internal documents of SSOs should contain provisions that would help solving the afore-specified post-standardization issues. In particular, the IPR policies could try to foresee how such disputes may be solved differently from the way they are being heard now, i.e. outside the national court systems.

With regard to all the specified above, it is possible to conclude, that the afore-described IPR policy is one of the elements for the success of widely applicable standards adopted by ETSI. The establishment of such a transparent access to the information on the essential IPRs through disclosure is one of main elements in the framework of ETSI's IPR policy. Such transparency allows ETSI to avoid competition law issues, whereas, the way the members are required to disclose essential IPRs reveals a clear understanding of the practical issues connected with such disclosure, i.e. the costly and time consuming search among the IPRs owned by ETSI members and hardly possible enforceability in case the afore-specified undertakings do not comply with the disclosure obligation.

In addition, the irrevocability of FRAND commitment itself, although not equal to a license, should be regarded as appropriate in the context of the standard-setting. As it will be discussed in further parts of this work, a reference to FRAND in the early stages of the standardization provides with flexibility, whereas, the irrevocability of the FRAND declaration creates higher possibilities, that the standard technology will be available for its users.

However, the question is whether, taking into consideration the complexity of circumstances and interests arising during standardization procedures, the afore-discussed strict avoidance of any economic or legal aspects related to IPRs in the activities of SSOs, is well founded and effective when it comes to better standard implementation and avoidance of extensive litigation after the standard is set.